

What is Claimed is:

1. A transgenic mouse comprising a nucleic acid sequence encoding a reporter protein and having at the 3' end of the coding region a 36 bp c-myc insert followed by a
5 segment encoding the wild-type neurofilament L (NF-L) 3' untranslated region, wherein said nucleic acid sequence is operably linked to a strong constitutive promoter and further wherein transcription of the nucleic acid sequence results in the mouse exhibiting motor neuron degeneration.

10 2. The transgenic mouse of claim 1 wherein the reporter protein is green fluorescent protein.

3. The transgenic mouse of claim 1 wherein motor neuron degeneration exhibited comprises a late-developing motor neuron degeneration that is characterized by alterations
15 in physical appearance and motor functions and can be detected as changes in neuronal cell structure.

4. The transgenic mouse of claim 1 wherein the nucleic acid sequence is a wild-type neurofilament L mRNA.

5. A method of identifying RNA-binding elements that
20 prevent motor neuron degeneration in an animal comprising:

a) determining a first the level of transcription of a wild-type neurofilament L mRNA in neuronal cells or tissues from a transgenic mouse of claim 1;

b) contacting said cells or tissues with a candidate
25 RNA-binding element;

c) determining a second level of transcription of the wild-type neurofilament L mRNA in the presence of the candidate RNA-binding element; and

d) comparing the first and second levels of
30 transcription of the wild-type neurofilament L mRNA in said

cells and tissues, wherein a decrease in the level of transcription is indicative of the ability of said candidate element to prevent motor neuron degeneration in said animal.

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Figure 1. Schematic representation of the experimental design. The subjects were divided into two groups: the control group and the experimental group. The control group was divided into two subgroups: the control group and the control group. The experimental group was divided into two subgroups: the experimental group and the experimental group. The control group was divided into two subgroups: the control group and the control group. The experimental group was divided into two subgroups: the experimental group and the experimental group.